

EXHIBIT 1

FILED UNDER SEAL

In the Matter Of:

In Re: Pork Antitrust Litigation

MICHAEL WILLIAMS

December 29, 2022



Confidential

Page 1

1
2 UNITED STATES DISTRICT COURT
3 DISTRICT OF MINNESOTA
4 Case No. 0:18-cv-01776-JRT-HB
5 -----
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7 IN RE:
8 PORK ANTITRUST LITIGATION
9
10 -----
11
12 **CONFIDENTIAL**
13
14 REMOTE VIDEO DEPOSITION OF
15 MICHAEL A. WILLIAMS
16
17 Thursday, December 29, 2022
18 11:06 a.m. (EST)
19
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21
22
23 Reported by:
24 Joan Ferrara, RMR, FCRR
25 Job No. 2022-876704

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2
3 December 29, 2022
4 11:06 a.m. (EST)
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8 Confidential Video Deposition of
9 MICHAEL A. WILLIAMS, held remotely via
10 Zoom, before Joan Ferrara, a Registered
11 Merit Reporter, Federal Certified Realtime
12 Reporter and Notary Public.
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22
23
24 (Continued)
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1 M. WILLIAMS - CONFIDENTIAL
 2 shift -- if you look at Figure 1, that
 3 would cause a different effect. That would
 4 cause the derived demand for pork -- I'm
 5 sorry, the derived demand for hogs to shift
 6 to the right.
 7 **Q. And you're not opining that the**
 8 **conspiracy caused the consumer demand curve**
 9 **to shift in either direction, is that**
 10 **right?**
 11 A. You asked me that earlier, and is
 12 that correct, I'm not offering an opinion
 13 that the alleged conspiracy caused the
 14 consumer demand for pork products to shift
 15 to the left or to the right.
 16 **Q. Okay. And so because there's no**
 17 **change in the consumer demand, then explain**
 18 **how derived demand connects the dots**
 19 **between the alleged conspiracy in a**
 20 **reduction in demand for hogs?**
 21 MR. FINLEY: Objection. Form.
 22 May mischaracterize prior testimony.
 23 A. Yeah. Actually, you answered
 24 your own question a few minutes ago. If we
 25 think about the demand for pork products,

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1 M. WILLIAMS - CONFIDENTIAL
 2 the effect of the alleged conspiracy is to
 3 cause the price to increase.
 4 Because this price, pork products
 5 increases, the quantity purchased of pork
 6 products is going to decline. It's going
 7 to go from -- I don't have a graph that
 8 shows this -- but we're going to -- the
 9 equilibrium quantity demanded of pork
 10 products is going to decline.
 11 And when that happens, less pork
 12 products are produced, less pork products
 13 are purchased. Therefore, the derived
 14 demand for hogs will shift to the left
 15 because not as many hogs are required,
 16 given that there's this alleged conspiracy
 17 that is reducing the quantity -- the supply
 18 of pork products.
 19 **Q. Okay. Thank you. I appreciate**
 20 **that.**
 21 **So let's take a look at Figure 1**
 22 **again. I'm just working off of the figure**
 23 **here. This shows that not only did the**
 24 **quantity supplied for hogs go down, but hog**
 25 **prices also went down as a result of the**

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1 **M. WILLIAMS - CONFIDENTIAL**
 2 **alleged conspiracy, is that correct?**
 3 MR. FINLEY: Objection. Form.
 4 Lack of foundation. Vague.
 5 A. Yeah, all else equal, if the
 6 derived demand shifts to the left, then the
 7 quantities supplied of hogs will fall from
 8 **Q but-for to Q actual. And if assuming**
 9 **that the supply curve of hogs is upward**
 10 **sloping, then the equilibrium price of hogs**
 11 **would fall from P but-for to P actual,**
 12 **again holding all other factors constant.**
 13 **Q. And does Figure 1 depict what you**
 14 **believe actually happened? Did, in fact,**
 15 **hog prices fall below but-for levels as a**
 16 **result of the Defendants' alleged conduct?**
 17 MR. FINLEY: Objection. Form.
 18 Vague. Ambiguous.
 19 A. Yeah, my report doesn't offer an
 20 opinion on that. The point to this graph
 21 was, as we've talked about in a few minutes
 22 ago, was to show that Dr. -- that -- again
 23 I'll just come back to that sentence in
 24 paragraph 52, "even if the supply of hogs
 25 was controlled by non-Defendants, that fact

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1 M. WILLIAMS - CONFIDENTIAL
 2 would not prevent Defendants from
 3 collusively reducing the supply of pork
 4 products."
 5 And so that's really the point to
 6 this discussion generally and Figure 1, in
 7 particular. But no, my report doesn't
 8 offer a specific opinion about actual and
 9 but-for hog prices.
 10 **Q. So would you say Figure 1 is**
 11 **illustrative of a point you're making, but**
 12 **not an opinion about what, in fact,**
 13 **happened as a result of the conspiracy?**
 14 MR. FINLEY: Objection. Vague
 15 and ambiguous.
 16 A. I wouldn't agree with that. I
 17 think it's -- I think it's abundantly clear
 18 that the derived demand for hogs did shift
 19 to the left. And the reason I say it's
 20 abundantly clear is because that's exactly
 21 what the econometric shows in the pork
 22 production regression in my opening report
 23 and the various robustness analyses that
 24 are conducted in my reply report. That the
 25 disputed conduct did cause actual pork

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1 **M. WILLIAMS - CONFIDENTIAL**

2 MR. FINLEY: Objection. Form.

3 Scope. Calls for speculation.

4 A. I don't believe my report
5 comments on this particular sentence.

6 **Q. I think I'm done with Professor**
7 **Mintert's report for now. If I'm wrong, I**
8 **apologize.**

9 **Let's take a look at Exhibit 9,**
10 **which is Dr. Haider's report, and I'd ask**
11 **you to turn to paragraph 74.**

12 **It starts on page 45, for those**
13 **following along.**

14 A. Yeah, so I see paragraph 74.

15 **Q. So the first -- let's start with**
16 **the first sentence of paragraph 74.**
17 **Dr. Haider writes: "Indeed, the prices of**
18 **corn and soybean meal dramatically**
19 **increased in 2007 and 2008, with prices**
20 **more than doubling between 2006 and 2008."**

21 **Did I read that correctly?**

22 A. Yes, sir.

23 **Q. And you don't dispute that**
24 **statement by Dr. Haider, correct?**

25 MR. FINLEY: Objection. Form.

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1 **M. WILLIAMS - CONFIDENTIAL**

2 Scope. Calls for speculation.

3 A. Yeah, I don't remember a sentence
4 in my reply report that specifically
5 disputes that first sentence in
6 Dr. Haider's paragraph 74.

7 **Q. In the third sentence, the first**
8 **clause, she says: "Feed costs account for**
9 **approximately two-thirds of the cost of**
10 **raising hogs."**

11 **Do you see that?**

12 A. Yes, I see that.

13 **Q. You don't dispute that general**
14 **statement either, do you?**

15 MR. FINLEY: Objection. Form.

16 Scope. Calls for speculation.

17 A. I don't recall a place in my
18 either opening or reply reports where I
19 specifically commented on that -- well, I
20 couldn't have commented on it in my opening
21 report.

22 No, in my reply report, I don't
23 recall a sentence right now that
24 specifically comments on her claim in the
25 first half of that sentence.

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1 **M. WILLIAMS - CONFIDENTIAL**

2 **Q. If you look at -- go down a few**
3 **sentences, just the first sentence at the**
4 **top of 46, still in paragraph 74, starting**
5 **with "Moreover" -- do you see that?**

6 A. Yes, I see that.

7 **Q. So Dr. Haider writes: "Moreover,**
8 **vaccines for Porcine Circovirus Type 2 were**
9 **introduced in 2006 and widespread**
10 **vaccination began in mid-2007."**

11 **Did I read that correctly?**

12 A. Yes, sir.

13 **Q. And you don't dispute that**
14 **statement by Dr. Haider either, correct?**

15 MR. FINLEY: Objection. Form.

16 Scope. Calls for speculation.

17 A. I don't recall a sentence in my
18 reply report that specifically disputes
19 that sentence.

20 **Q. And apart from kind of the**
21 **specifics of your reply report, you don't**
22 **dispute the general timeline here that the**
23 **Circovirus vaccine was introduced in 2006**
24 **and the widespread vaccinations began in**
25 **mid-2007?**

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1 **M. WILLIAMS - CONFIDENTIAL**

2 MR. FINLEY: Objection. Form.

3 Scope. Lack of foundation. Calls for
4 speculation.

5 A. I don't recall a sentence in
6 either of my reports that specifically
7 would be in conflict with that timeline
8 described in that sentence.

9 **Q. If you go down a few more**
10 **sentences, there's some deposition**
11 **testimony from a different Dr. Meyer than**
12 **the USDA economist -- sorry, I actually**
13 **don't know which Dr. Meyer this is**
14 **referring to -- from one of the Dr. Meyers,**
15 **as described by Dr. Haider, Dr. Meyer**
16 **explained in his deposition that Circovirus**
17 **"was a gateway disease that opened up the**
18 **possibility of a lot of other bad things**
19 **happening and a lot of pigs died because of**
20 **it. Once the Circovirus vaccine became**
21 **widely available, it 'almost immediately**
22 **had significantly more pigs reach market**
23 **weight than had been in the past and so**
24 **productivity increased pretty**
25 **dramatically."**

<p style="text-align: right;">Page 173</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 Did I read those two sentences</p> <p>3 correctly?</p> <p>4 A. Yes, sir.</p> <p>5 Q. And you don't dispute that once</p> <p>6 the Circovirus vaccine became widely</p> <p>7 available, it resulted in a dramatic</p> <p>8 increase in productivity, correct?</p> <p>9 MR. FINLEY: Objection. Form.</p> <p>10 Scope. Lack of foundation. Calls for</p> <p>11 speculation.</p> <p>12 A. I don't recall right now a</p> <p>13 specific sentence in my reply report that</p> <p>14 disputes these two sentences.</p> <p>15 Q. And then the next sentence says:</p> <p>16 "An article written by Dr. Meyer in January</p> <p>17 2008 states that 'hog prices are low</p> <p>18 because there are lots of hogs available,</p> <p>19 largely because hog producers solved their</p> <p>20 Circovirus death and morbidity losses en</p> <p>21 masse and did so very abruptly."</p> <p>22 Did I read that correctly?</p> <p>23 MR. FINLEY: Objection. Form.</p> <p>24 Scope. Calls for speculation.</p> <p>25 I'm sorry, I object to the form</p>	<p style="text-align: right;">Page 175</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 A. I don't recall a sentence in my</p> <p>3 reply report that specifically addresses</p> <p>4 this sentence. I'm not sure what she means</p> <p>5 by "losing money." There's an important</p> <p>6 difference between accounting profits</p> <p>7 versus economic profits. I'm not sure</p> <p>8 exactly what she's saying here.</p> <p>9 But other than that, I don't</p> <p>10 specifically remember commenting on this</p> <p>11 sentence.</p> <p>12 Q. Yeah, and I think another -- if</p> <p>13 we could just take a look at Tab 9 in your</p> <p>14 binder.</p> <p>15 MR. SCHWINGLER: Bryan, if you</p> <p>16 could pull that up, we'll mark this</p> <p>17 Exhibit 11, and set aside Dr. Haider's</p> <p>18 report for just a moment, but keep it</p> <p>19 handy.</p> <p>20 (Williams' Exhibit 11, 10/22/09</p> <p>21 statement by the Deputy Undersecretary</p> <p>22 of Agriculture Farm and Foreign</p> <p>23 Agricultural Services before</p> <p>24 Congressional Subcommittee, remotely</p> <p>25 introduced and provided electronically</p>
<p style="text-align: right;">Page 174</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 of your question.</p> <p>3 Objection withdrawn.</p> <p>4 A. You did read it correctly.</p> <p>5 Q. And you don't dispute this</p> <p>6 statement by Dr. Meyer from January of 2008</p> <p>7 that hog producers solved their Circovirus</p> <p>8 death and morbidity losses en masse and</p> <p>9 very abruptly, correct?</p> <p>10 MR. FINLEY: Objection. Form.</p> <p>11 Scope. Calls for speculation.</p> <p>12 A. I don't recall a sentence or</p> <p>13 section in my reply report that</p> <p>14 specifically addresses this.</p> <p>15 Q. The next sentence in Dr. Haider's</p> <p>16 report reads: "The combination of high</p> <p>17 feed costs and low hog prices meant that</p> <p>18 hog producers were losing money during this</p> <p>19 time period."</p> <p>20 Did I read that correctly?</p> <p>21 A. Yes, sir.</p> <p>22 Q. And you don't dispute that</p> <p>23 statement by Dr. Haider either, correct?</p> <p>24 MR. FINLEY: Objection. Form.</p> <p>25 Scope. Calls for speculation.</p>	<p style="text-align: right;">Page 176</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 to the reporter.)</p> <p>3 MR. SCHWINGLER: Bryan, if you</p> <p>4 could turn to the next page, which is</p> <p>5 page 1 of the actual exhibit.</p> <p>6 Q. Dr. Williams, I know you're</p> <p>7 pulling it open now. What you'll be</p> <p>8 looking at is Exhibit 11 for your</p> <p>9 deposition, which is a statement by the</p> <p>10 Deputy Undersecretary of Agriculture Farm</p> <p>11 and Foreign Agricultural Services before a</p> <p>12 Congressional Subcommittee on October 22,</p> <p>13 2009, and I'm going to be asking you about</p> <p>14 the third paragraph on the first kind of</p> <p>15 page of his statement that begins with "Hog</p> <p>16 production is cyclical."</p> <p>17 And specifically, the sentence</p> <p>18 beginning with, "According to Dr. John</p> <p>19 Lawrence."</p> <p>20 So that sentence reads:</p> <p>21 "According to Dr. John Lawrence of Iowa</p> <p>22 State University, a typical Iowa-southern</p> <p>23 Minnesota farrow-to-finish operation,</p> <p>24 experienced monthly losses per hog marketed</p> <p>25 averaging about \$20 for the 24 months from</p>

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1 **M. WILLIAMS - CONFIDENTIAL**
 2 slaughter by U.S. packers."
 3 Did I read that correctly?
 4 A. Yes, sir.
 5 Q. And after a citation, she goes on
 6 to say: "Imports of live hogs, excluding
 7 breeding animals from Canada, fell from a
 8 peak of 9.9 million heads in 2007,
 9 representing 9 percent of hogs slaughtered
 10 in the U.S. to 6.3 million heads in 2009."
 11 Did I read that correctly?
 12 A. Yes, sir.
 13 Q. Then, after the citation, she
 14 says: "This reduction in imports
 15 represented a 3.3 percent reduction in hogs
 16 available for slaughter by U.S. pork
 17 processors."
 18 Did I read that correctly?
 19 A. Yes, sir.
 20 Q. And then she goes on after the
 21 citation to say, "Imports of live hogs from
 22 Canada continued to decline after 2010,
 23 remaining below 6.0 million heads until
 24 2021."
 25 Did I read that right?

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1 **M. WILLIAMS - CONFIDENTIAL**
 2 A. Yes, sir.
 3 Q. And you don't dispute any of
 4 these statements about hog imports from
 5 Canada in Footnote 118, do you?
 6 MR. FINLEY: Objection. Form.
 7 Scope. Calls for speculation.
 8 A. I don't recall a place in my
 9 reply report where I address these
 10 sentences.
 11 Q. Let's go to paragraph 92 of
 12 Dr. Haider's Report and I'll look at the
 13 second sentence where Dr. Haider writes:
 14 "The industry experienced the weakest pork
 15 demand in a 31-year period in 2008 leading
 16 to one of the most challenging times in
 17 history for pork producers."
 18 Did I read that correctly?
 19 A. Yes, that's correct.
 20 Q. And I'd like to focus on the
 21 first clause of that sentence, "The
 22 industry experienced the weakest pork
 23 demand in a 31-year period in 2008."
 24 You don't dispute that statement
 25 in your reply report, do you?

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1 **M. WILLIAMS - CONFIDENTIAL**
 2 MR. FINLEY: Objection. Form.
 3 Scope. Calls for speculation.
 4 A. I don't remember a specific
 5 sentence that talks about this exact
 6 sentence in Dr. Haider's Report.
 7 I would point out, of course,
 8 that both my -- that my overcharge
 9 regression includes a number of demand side
 10 variables, none of which were objected to
 11 by Dr. Haider that measure and account for
 12 the demand for pork products.
 13 Q. And we may end up getting into
 14 sort of what, if anything, to make of all
 15 of this at some point.
 16 Just in terms of the basic
 17 underlying industry facts, you're not
 18 disputing that demand for pork in 2008 was
 19 at a 31-year low, correct?
 20 MR. FINLEY: Objection. Form.
 21 Scope. Calls for speculation.
 22 A. As I say, I don't specifically
 23 remember addressing that exact sentence.
 24 But what I'm pointing out is that it's an
 25 empirical -- I don't know what "weakest"

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1 **M. WILLIAMS - CONFIDENTIAL**
 2 means, but it's not the way an economist --
 3 it's not a word that an economist would
 4 usually use in this context.
 5 But whatever empirically is the
 6 demand for pork, that's what is measured
 7 actually in both Dr. Haider's and my
 8 overcharge regressions. I think we use --
 9 I can't think of a demand side variable
 10 that's different between our regressions.
 11 I'd have to double-check that. I don't
 12 remember one right now.
 13 But at any rate, there are a
 14 number of demand side variables in my
 15 overcharge regression, both the one in my
 16 opening report, as well as the sensitivity
 17 analyses in my reply report responding to
 18 her comments.
 19 So it's an empirical claim.
 20 Whether or not it's true, I don't have a
 21 specific opinion about that I mention in my
 22 report. But at any rate, the pork demand
 23 is measured by the demand side variables in
 24 overcharge regressions.
 25 Q. So if you go to the next

<p style="text-align: right;">Page 185</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 sentence, she writes: "In addition, as a</p> <p>3 result of the Circovirus vaccine which</p> <p>4 became widely available by mid-2007, hog</p> <p>5 mortality levels decreased rapidly in the</p> <p>6 latter part of 2007 and 2008, meaning</p> <p>7 greater percentage of pigs survived to</p> <p>8 market weight than anticipated by producers</p> <p>9 when they made breeding decisions."</p> <p>10 Did I read that correctly?</p> <p>11 A. Yes, you did.</p> <p>12 Q. And you don't dispute that</p> <p>13 statement by Dr. Haider, correct?</p> <p>14 MR. FINLEY: Objection. Form.</p> <p>15 Scope. Calls for speculation.</p> <p>16 A. I don't recall a sentence in my</p> <p>17 reply report right now that specifically</p> <p>18 addresses this sentence.</p> <p>19 I would just note that both the</p> <p>20 production regression and overcharge</p> <p>21 regressions in my reports do contain</p> <p>22 variables for the cost of producing hogs.</p> <p>23 Q. Yeah, but -- and we may get into</p> <p>24 that -- oh, sorry, go ahead, you can</p> <p>25 finish.</p>	<p style="text-align: right;">Page 187</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 producers -- I don't know, anticipated by</p> <p>3 producers to me is very vague. I don't</p> <p>4 know how one would measure the</p> <p>5 anticipations of producers.</p> <p>6 But having said that, I don't</p> <p>7 otherwise specifically remember addressing</p> <p>8 this sentence.</p> <p>9 Q. You don't think there's any way</p> <p>10 to analyze empirically what hog</p> <p>11 producers -- what information was available</p> <p>12 to hog producers when they made decisions</p> <p>13 about how many hogs to produce?</p> <p>14 MR. FINLEY: Objection. Form.</p> <p>15 Mischaracterizes prior testimony.</p> <p>16 Calls for speculation.</p> <p>17 A. Yeah, that's not what I said. I</p> <p>18 was referring to her phrase where she talks</p> <p>19 about anticipated by producers and I was</p> <p>20 just pointing out that she -- her report</p> <p>21 doesn't contain any empirical study other</p> <p>22 than a cite to -- I guess it looks like</p> <p>23 some congressional testimony.</p> <p>24 So it looks like she -- I'm</p> <p>25 reading here, it looks to me like she got</p>
<p style="text-align: right;">Page 186</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 A. I'm sorry, I didn't state that</p> <p>3 very well. I didn't mean cost of producing</p> <p>4 hogs.</p> <p>5 I was really referring to</p> <p>6 paragraph 153 in my opening report called</p> <p>7 hog costs. Sorry.</p> <p>8 Q. And just so we're clear, I think</p> <p>9 is when you said, when Dr. Haider writes</p> <p>10 that a greater percentage of pigs survive</p> <p>11 to market weight than anticipated by</p> <p>12 producers when they made breeding</p> <p>13 decisions, you're not disputing that</p> <p>14 statement, correct?</p> <p>15 MR. FINLEY: Objection. Form.</p> <p>16 Scope. Calls for speculation.</p> <p>17 A. I don't remember specifically</p> <p>18 addressing this sentence. It sounds rather</p> <p>19 speculative to me. I don't know, when she</p> <p>20 writes anticipated by producers, I don't</p> <p>21 know -- I don't know what kind of study --</p> <p>22 I don't see any particular study she's</p> <p>23 performed to measure -- to determine that a</p> <p>24 greater percentage of pigs survived to</p> <p>25 market weight than anticipated by</p>	<p style="text-align: right;">Page 188</p> <p>1 M. WILLIAMS - CONFIDENTIAL</p> <p>2 the word anticipated from Dr. Buhr, I</p> <p>3 guess, B-U-H-R, from his congressional</p> <p>4 testimony. I don't know how Dr. Buhr</p> <p>5 measured pork producers' anticipations.</p> <p>6 At any rate, as I said, I don't</p> <p>7 specifically remember commenting on this</p> <p>8 sentence. As I said, it does seem very</p> <p>9 speculative to me. I don't know how Dr.</p> <p>10 Buhr purported to measure the anticipations</p> <p>11 of producers.</p> <p>12 Q. Maybe I'll come at a slightly</p> <p>13 different angle. This may help.</p> <p>14 So you're not offering an opinion</p> <p>15 that, contrary to Dr. Haider's assertion,</p> <p>16 hog producers, in fact, did anticipate the</p> <p>17 decrease in mortality from the forthcoming</p> <p>18 Circovirus vaccine and factored that</p> <p>19 anticipated reduction in mortality into</p> <p>20 their production decisions, correct?</p> <p>21 MR. FINLEY: Objection. Form.</p> <p>22 A. As I said, I don't recall a</p> <p>23 sentence in my reply report that</p> <p>24 specifically addresses this sentence -- oh,</p> <p>25 but your question was, yeah, do I have a</p>

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1 M. WILLIAMS - CONFIDENTIAL
2 is changing all the time.
3 So an exogenous factor like this
4 would cause a "permanent change" subject to
5 the caveat that that means all other
6 factors being held the same.
7 **Q. I understand.**
8 **So the kind of next clause in**
9 **that sentence I read says, "Leading**
10 **suppliers to increase total pork supply**
11 **instead of fixing total supply and reducing**
12 **domestic supply year after year."**
13 **When you use the term "suppliers"**
14 **in this context, who are you referring to?**
15 A. Pork producers.
16 **Q. "Pork producers" is kind of a**
17 **tricky term in this industry because I**
18 **think the way industry participants use**
19 **that, that would refer to hog producers,**
20 **not to pork packers. So I just want to**
21 **make sure we kind of have consistent uses**
22 **of term.**
23 **Are you referring -- let me just**
24 **say it, are you referring to packers or hog**
25 **producers when you say "suppliers" in this**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **sentence?**
3 MR. FINLEY: Objection. Form.
4 I'm finished objecting.
5 Go ahead and answer.
6 A. Yeah, I'm referring to packers.
7 **Q. So it says here in the sentence,**
8 **"Following the change in international**
9 **demand, permanently leading suppliers to**
10 **increase total pork supply."**
11 **Based on your analysis of the**
12 **industry, how quickly could packers bring**
13 **about an increase in pork supply?**
14 MR. FINLEY: Objection. Form.
15 Scope.
16 A. As we've talked about earlier, my
17 report doesn't offer a specific opinion
18 about the timing on that.
19 **Q. What would packers need to do in**
20 **order to increase total pork supply as**
21 **suggested in paragraph 75?**
22 MR. FINLEY: Objection. Form.
23 Scope. Calls for speculation.
24 A. Well, as we talked about when we
25 were looking at Figure 1, they would -- I'm

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1 M. WILLIAMS - CONFIDENTIAL
2 sure there's a number of things they would
3 do, but one of the things they would do is
4 they would buy more hogs.
5 **Q. Yeah, and in order for them to**
6 **buy more hogs, someone would have to grow**
7 **more hogs, correct?**
8 MR. FINLEY: Objection. Form.
9 Scope. Calls for speculation.
10 A. Yeah. I mean, your use of the
11 word "someone" is a little vague. But
12 certainly you can't buy a hog that doesn't
13 exist. So yes, they would be buying more
14 hogs and that would -- in other words, we
15 would be moving back up that supply curve
16 shown in Figure 1. So the equilibrium
17 quandary supply of hogs, all other factors
18 being of the same, would increase.
19 **Q. In order to have more hogs, would**
20 **you need more sows?**
21 MR. FINLEY: Objection. Form.
22 Calls for speculation.
23 A. My report doesn't offer an
24 opinion on that.
25 **Q. So, and I guess this sentence**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **that I read to you about suppliers, leading**
3 **suppliers to increase total pork supply,**
4 **you're not offering an opinion on when that**
5 **would happen like in the real world, how**
6 **long it would take, when it would occur**
7 **relative to the increase in export sales,**
8 **is that fair?**
9 A. Yes. As we talked about earlier,
10 my report doesn't contain a specific
11 opinion about the timing between, for
12 example, this increase in demand for pork
13 that may have resulted from, for example,
14 the U.S. Free Trade Agreement. I don't
15 offer a specific opinion about the timing
16 between such a change in the international
17 demand for U.S. pork products and how long
18 that would take to be effectuated.
19 **Q. Do you know what the record shows**
20 **in terms of how far in advance packers**
21 **typically book export sales?**
22 MR. FINLEY: Objection. Form.
23 Potentially on the basis of expert
24 stip, this is asking about materials
25 not included in the report, and also

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1 M. WILLIAMS - CONFIDENTIAL
2 scope.
3 A. I'm sorry, can you repeat the
4 question? I want to make sure I understood
5 it.
6 **Q. Yeah. So I could have a pound of**
7 **pork in my hands right now and sell it to**
8 **somebody and they'd give me money and I'd**
9 **give them the pork.**
10 I could enter a contract that
11 says five years from now I'll sell you a
12 pound of pork and there's all sorts of
13 possibilities in between.
14 So my question is, do you have an
15 understanding as to export sales, typically
16 how far in advance packers will commit to
17 selling those products, will book the sale?
18 MR. FINLEY: Same objections.
19 And object based on scope.
20 A. My report doesn't offer an
21 opinion on that.
22 **Q. If you go to paragraph 71 of your**
23 **reply report, in the second sentence of**
24 **that paragraph you use a term "supply for**
25 **foreign markets."**

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1 M. WILLIAMS - CONFIDENTIAL
2 Do you see that?
3 A. Yes.
4 **Q. And how would you define that?**
5 **If it helps, I think you address this in**
6 **paragraph 73? I'm not trying to trick you**
7 **or anything. But just if you could confirm**
8 **how you define the term "supply for foreign**
9 **markets," I would appreciate it.**
10 A. Yeah. Give me just one second
11 because I'm going to check Dr. Haider's
12 Report, her report, paragraph 88. If you
13 could just give me a second here.
14 Yes. So when I -- when I use the
15 phrase "supply for foreign markets," as you
16 correctly noted, I use that phrase in
17 paragraph 71, I explain what I meant in
18 paragraph 73. I was just referring to U.S.
19 export support products, which is
20 Dr. Haider is disputing in this section of
21 her report, that I -- in my original
22 pork -- yeah, pork output regression, I had
23 used, as you and I talked about in my last
24 deposition, I had used less pork
25 production -- hang on for just one

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1 M. WILLIAMS - CONFIDENTIAL
2 second -- yeah, in paragraph 151, that was
3 the data I discussed from the USDA about
4 quarterly pork production net of net
5 exports to measure industry-wide production
6 levels of pork products for domestic
7 supply.
8 And then -- that's what
9 Dr. Haider was critiquing in this portion
10 of her report, generally, and in paragraph
11 88, in particular.
12 And then as you said, I used the
13 phrase supply for foreign markets, which is
14 perhaps a little vague, but I did clarify
15 it in paragraph 73, that I was referring to
16 U.S. exports of pork product.
17 **Q. And that's -- yeah, so you're not**
18 **opining, for example, that there are hogs**
19 **that are grown -- that can only be used for**
20 **export sales, right?**
21 MR. FINLEY: Objection. Form.
22 Scope. Calls for speculation.
23 A. Again, my report doesn't offer
24 such opinion. Again, I would refer you
25 back -- well, we're talking about hogs now,

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1 M. WILLIAMS - CONFIDENTIAL
2 so perhaps it's not relevant. I was going
3 to refer you back to the section of
4 Dr. Mintert's Report that we talked about
5 earlier in paragraphs 226 to 229 where he
6 distinguishes some pork products that are
7 exported, but not highly valued in the U.S.
8 **Q. And you're not offering an**
9 **opinion that there's entirely independent**
10 **and separate supply chain for pork that**
11 **gets exported than for pork that's sold**
12 **domestically, correct?**
13 A. That is correct.
14 **Q. And you're not offering an**
15 **opinion that all pork that was ultimately**
16 **sold overseas during the relevant period**
17 **was categorically unavailable to U.S.**
18 **customers, correct?**
19 A. I'm certainly not offering that
20 opinion. And to be clear, I don't believe
21 Dr. Mintert was actually offering that
22 opinion either. I think what he was saying
23 is there are some pork products that are
24 highly valued overseas, but not highly
25 valued in the U.S.

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1 M. WILLIAMS - CONFIDENTIAL
2 now on that kind of a stopping point.
3 So I guess I have a slight preference
4 to break now, but I'll leave it up to
5 you, Dr. Williams.
6 THE WITNESS: That's fine, but I
7 would like to keep the break short
8 because the prior one was kind of
9 long.
10 So if we could just do 15
11 minutes, that would be fine by me.
12 MR. SCHWINGLER: Okay. Let's do
13 that. We can start few minutes after
14 the hour.
15 THE VIDEOGRAPHER: The time is
16 3:48 p.m. and we are going off the
17 record.
18 (Recess taken from 3:48 p.m. to
19 4:09 p.m.)
20 THE VIDEOGRAPHER: The time is
21 4:09 p.m. and we are back on the
22 record.
23 BY MR. SCHWINGLER:
24 Q. Dr. Williams, I'd like to ask you
25 a few questions about your overcharge

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1 M. WILLIAMS - CONFIDENTIAL
2 model.
3 When we spoke the last time,
4 Dr. Williams, we talked a little bit about
5 the benchmark period.
6 And just to level set, the
7 benchmark period for your direct purchaser
8 overcharge model in your opening report is
9 2005 through 2008, is that right?
10 A. Yes, I'm just looking in my
11 opening report, and I apologize for the
12 delay. And I don't remember if this is a
13 typo or not. The opening report says 2005,
14 month 3. This is something that's easily
15 ascertainable by looking at the backup
16 materials. I think that might be a typo,
17 but I just don't remember right now.
18 It does say in paragraph 218 of
19 my opening report that the benchmark period
20 used for the regression analysis covers the
21 period January 2005 through December 2008,
22 and I don't remember right now if it's just
23 a typo that in Table 4 of the opening
24 report on page 105, it says month 3. I
25 don't remember why it says month 3 right

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1 M. WILLIAMS - CONFIDENTIAL
2 there, and it might be a typo.
3 Q. Okay. I appreciate that
4 clarification, but I think there's no
5 question that the benchmark period covers
6 at least some point in 2005 through the end
7 of 2008, is that correct?
8 A. That is correct.
9 Q. And in the interest of seeing,
10 trying to figure out where we're in
11 agreement and where we're in disagreement
12 or somewhere in between, if I could have
13 you look at Tab 6, and this will be Exhibit
14 12, I believe.
15 (Williams Exhibit 12, Memorandum
16 in Support of Motion to Exclude the
17 Testimony of Dr. Michael Williams,
18 remotely introduced and provided
19 electronically to the reporter.)
20 BY MR. SCHWINGLER:
21 Q. So this is -- Exhibit 12 is our
22 brief, our brief in support of our motion,
23 and I'll have you look at page 16 of the
24 brief. And it's page 20 of the PDF, I
25 think, after you get through the

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1 M. WILLIAMS - CONFIDENTIAL
2 preliminary things.
3 MR. SCHWINGLER: Bryan, for those
4 following along, if you could flip to
5 page 16 of the brief, I'd appreciate
6 it.
7 Bryan, I'm not seeing the
8 screen -- okay, thank you.
9 A. I'm sorry, did you say page 16?
10 Q. Page 16, yeah. It's at the
11 bottom of page 16, there is a quote from
12 Rubinfeld 2009 and another quote from the
13 ABA, ABA section of antitrust law.
14 So first, we quote -- and this is
15 Daniel Rubinfeld's chapter, modern methods
16 for measuring antitrust damages, and the
17 research handbook on the economics of
18 antitrust law from 2009, Chapter 14,
19 Section 2B: It is essential that the
20 non-impact period be as similar as possible
21 to the impact period.
22 Do you see that?
23 A. Yes, I see that.
24 MR. FINLEY: Objection. Form.
25 Lack of foundation for the reason that

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1 M. WILLIAMS - CONFIDENTIAL
2 we're looking at a quote from an
3 article.
4 **Q. And you don't -- you don't**
5 **dispute that principle, do you,**
6 **Dr. Williams?**
7 MR. FINLEY: Objection. Form.
8 Scope. Calls for speculation.
9 A. I don't have a specific reason to
10 disagree with that quote.
11 **Q. And then looking at the next**
12 **quote from the ABA section of antitrust**
13 **law, proving antitrust damages, legal and**
14 **economic issues, Third Edition 2017 at page**
15 **181: "It is important to test whether**
16 **prices react differently to the supply and**
17 **demand factors in the conspiracy period**
18 **than they did in the non-conspiracy**
19 **period."**
20 **Did I read that correctly?**
21 A. Yes, you did.
22 **Q. All right. And you don't dispute**
23 **that principal either, correct?**
24 MR. FINLEY: Objection. Form.
25 A. Yeah, I don't have a specific

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1 M. WILLIAMS - CONFIDENTIAL
2 reason to disagree with this.
3 MR. SCHWINGLER: You can set that
4 exhibit aside.
5 So let's take a look at -- I
6 think it's Tab 14. This is electronic
7 only because I didn't have it when we
8 shipped out the exhibit. So this can
9 be shown up on the screen, but it
10 won't be in the box. This will be
11 exhibit -- is it Exhibit 13?
12 (Williams' Exhibit 13, Two
13 charts, remotely introduced and
14 provided electronically to the
15 reporter.)
16 **Q. So Exhibit 13 -- Bryan will**
17 **upload it in a second.**
18 **So Exhibit 13, this is two**
19 **charts. One is based on Exhibit 1 and**
20 **Professor Mintert's Report and one is based**
21 **on Figure 7 in the Commercial Plaintiffs'**
22 **Fourth Amended Complaint.**
23 **And all that we've done to those**
24 **two figures is add in, in red shading, your**
25 **benchmark period.**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **So my only couple of questions**
3 **for you on this --**
4 MR. FINLEY: I do want to --
5 sorry, I want to object to this as an
6 exhibit. We can proceed with the
7 questioning, but there is some --
8 object. Among other things this may
9 be supplemental expert work that I'm
10 just now seeing. I'm not exactly sure
11 who prepared this based on the
12 description that's been proffered and
13 I think that even as we're having a
14 discussion of this, we'll be relying
15 on your representations about what's
16 been done to these diagrams.
17 MR. SCHWINGLER: That's fair.
18 BY MR. SCHWINGLER:
19 **Q. Dr. Williams, I'll have you just**
20 **assume that we've faithfully reproduced**
21 **Exhibit 1 to Professor Mintert's Report and**
22 **Figure 7 to the Complaint.**
23 **My only -- my first question is,**
24 **is just the red shaded area, that does**
25 **represent your benchmark that you used in**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **your -- in your overcharge model, correct?**
3 MR. FINLEY: Objection. Form.
4 Let me take a step back. I want
5 to maintain the objections about where
6 this exhibit has come from and who
7 prepared it, and also objection, form,
8 vague.
9 A. Well, the top graph looks a
10 little confusing to me. I thought you said
11 that the area in red was the benchmark
12 period, but there's a dashed line to the
13 right of it that says 2009. But the
14 benchmark period doesn't go to 2009. So I
15 don't understand it.
16 **Q. The red lines go from 2005 to**
17 **2008 and that's what I'm asking you to**
18 **confirm is your benchmark period.**
19 A. Well, that part is correct, but
20 the graph doesn't appear to be correct
21 because there's a -- why is there a gap
22 between the right-hand part of the
23 benchmark and -- it's kind of small, but it
24 looks like it says 2009 alleged conspiracy
25 period begins, but why is there a gap

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1 **M. WILLIAMS - CONFIDENTIAL**
2 MR. FINLEY: Objection. Form.
3 Scope. Calls for speculation.
4 A. If I understood your question
5 correctly, you're saying if the Circovirus
6 was essentially perfect, like if it just
7 prevented all such disease from the
8 Circovirus, would that, all other things
9 equals, tend to increase hog production? I
10 think that was your question.
11 **Q. No, no, sorry. It's even simpler**
12 **than that, which is if the vaccine comes**
13 **along and, you know, it effectively**
14 **prevents the disease, would that lead to an**
15 **increase or a decrease in mortality?**
16 MR. FINLEY: Objection. Form.
17 Incomplete hypothetical. Calls for
18 speculation.
19 A. My report doesn't offer a
20 specific opinion about that. But if I'm
21 understanding your question correctly, it
22 sounds like it would lead to a decrease in
23 mortality. But again, my report doesn't
24 offer a specific opinion about that.
25 **Q. And if you look at -- if we can**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **go back to Dr. Haider's report, which is**
3 **Exhibit 9 -- I apologize for bouncing back**
4 **and forth -- but if we can go to paragraph**
5 **127, Note 241.**
6 A. If I could just have a moment to
7 read this. It's kind of a long footnote.
8 **Q. Yeah, no problem. Just let me**
9 **know when you're ready.**
10 A. I've read the footnote now.
11 **Q. And I'd like to just direct you**
12 **to about the middle where Dr. Haider refers**
13 **to Seaboard's piglet mortality and she**
14 **says, "This effect is neither captured**
15 **by" -- or she refers to Seaboard's piglet**
16 **mortality and then she says "which barely**
17 **changed during the period of 2006 and**
18 **2008."**
19 **Do you see that?**
20 A. Yes, I see that.
21 **Q. Do you know whether that's**
22 **correct? Is her characterization of the**
23 **Seaboard mortality data accurate?**
24 MR. FINLEY: Objection. Form.
25 A. Yeah, I don't have a specific

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1 M. WILLIAMS - CONFIDENTIAL
2 recollection of it right now. You know,
3 obviously the data show what the data show.
4 I just don't remember if her
5 characterization is correct.
6 **Q. Do you know, do you know whether**
7 **Seaboard's hog farms were -- I don't know**
8 **the right word -- infected or -- let's**
9 **start again.**
10 **Do you know whether Seaboard's**
11 **hog farms were ever significantly impacted**
12 **by the Circovirus before the vaccine became**
13 **available?**
14 MR. FINLEY: And objection on the
15 basis of the expert stip that this is
16 calling for preliminary work product.
17 The witness may answer.
18 A. Yeah, I don't recall -- I don't
19 recall seeing any -- certainly my reports
20 don't offer any opinion about that. I
21 don't specifically recall a discussion of
22 that right now.
23 **Q. All right. If we could take a**
24 **look at the other variable you mention in**
25 **paragraph 118, which is hog cost.**

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1 **M. WILLIAMS - CONFIDENTIAL**
2 **Can you remind us, is this the**
3 **hog cost data from Iowa State?**
4 A. That is correct.
5 **Q. And in Footnote 165, the**
6 **paragraph 118 of your reply, you described**
7 **some of the components that go into that**
8 **variable, which include feed cost, non-feed**
9 **cost, and death loss in nursery and**
10 **finishing phases.**
11 **Did I read that correctly?**
12 A. Yes, sir.
13 **Q. All right. And is it your**
14 **opinion that Iowa State's hog cost data**
15 **capture industry-wide changes in hog**
16 **mortality caused by the Circovirus vaccine?**
17 MR. FINLEY: Objection. Form.
18 Scope.
19 A. There's a lot of background
20 noise.
21 Well, I would have to
22 double-check in a little bit more detail
23 the -- all of the factors that are picked
24 up in the Iowa State hog cost variable.
25 It does talk about death loss

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1 M. WILLIAMS - CONFIDENTIAL
2 rate in nursery and finishing phases,
3 which, of course, would be related to
4 mortality rates.

5 So I think the short answer to
6 your question is yes.

7 **Q. Do you know the components that**
8 **are listed in paragraph 165, do you know**
9 **how those components are weighted in the**
10 **actual hog cost variable itself?**

11 A. I would have to go back and
12 double-check. These are described in -- or
13 this variable is described in paragraph 153
14 of my opening report, in particular the
15 data -- the source for the data are given
16 in Footnote 169 in that paragraph, but I
17 don't specifically remember right now what
18 the weights were.

19 **Q. Would it surprise you if the**
20 **death loss static accounted for less than**
21 **10 percent of the value of the hog cost**
22 **variable itself?**

23 A. I don't have a basis to be
24 surprised or not surprised. I just don't
25 recall right now what the weights are.

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1 M. WILLIAMS - CONFIDENTIAL

2 **Q. And would you agree that the data**
3 **as provided by Iowa State, you can actually**
4 **pull out the death loss data separately and**
5 **use that as a standalone control variable**
6 **if you wanted to?**

7 MR. FINLEY: Objection. Form.
8 Calls for speculation.

9 A. That I don't specifically recall.
10 It's possible, I suppose. You just have to
11 look at the data and see if what you're
12 describing is possible.

13 **Q. Did you conduct any analysis to**
14 **see how the Iowa State hog cost variable**
15 **actually changed or didn't change as a**
16 **result of the Circovirus vaccine?**

17 MR. FINLEY: Objection on the
18 basis of the expert stip to the extent
19 this calls for preliminary work
20 product.

21 A. I don't believe there's a
22 discussion of that in my report, in my
23 reply report or my opening report. I don't
24 recall a specific discussion of that.

25 **Q. So I guess you're not offering an**

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1 **M. WILLIAMS - CONFIDENTIAL**

2 **opinion that, in fact, Iowa State hog cost**
3 **variable does capture the effects, if any,**
4 **of the Circovirus vaccine on industry-wide**
5 **hog production?**

6 MR. FINLEY: Objection. May
7 mischaracterize prior testimony.

8 A. I thought I answered just the
9 opposite a few minutes ago. I said that
10 the definition of it, as discussed in
11 Footnote 165, says as reflected in the hog
12 cost data, hog cost data includes feed
13 cost, non-feed cost and death loss rate in
14 nursery and finishing phases and certainly
15 the latter part, that death loss rate in
16 nursery and finishing phases is, of course,
17 related to the hog mortality rate, which of
18 course is also related to the Circovirus,
19 since it affects hog mortality.

20 **Q. I understand what's in your**
21 **report and what you said generally, but my**
22 **question was, what did you do to check to**
23 **see if this variable actually changed in**
24 **response to the Circovirus vaccine. And I**
25 **heard you say that's not in your report.**

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1 **M. WILLIAMS - CONFIDENTIAL**

2 MR. FINLEY: Yeah, and once
3 again, object based on expert stip to
4 the extent this calls for preliminary
5 work product.

6 A. Yes. I'll just repeat what I
7 said earlier. I don't believe that my
8 opening report nor my rely report has a
9 specific analysis that addresses exactly
10 what you're asking about.

11 **Q. Let's actually go back to your**
12 **opening report and look at how you**
13 **described your rationale for using this**
14 **variable.**

15 **So let's take look at Exhibit 7**
16 **and we'll go to paragraph 153.**

17 A. Yes, I'm there.

18 **Q. All right. You're ahead of me.**
19 **Okay, here with go.**

20 **So paragraph 153 says hog costs.**
21 **That's in italics there, right?**

22 A. That is correct.

23 **Q. And then you say: "The**
24 **production cost of hogs directly affects**
25 **Defendants' payment on hogs, which is the**

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1 M. WILLIAMS - CONFIDENTIAL
2 market factors, but they could not have
3 been known with certainty.
4 **Q. And you're not offering an**
5 **opinion that Iowa State's hog cost data**
6 **from 2008 reflects the information that was**
7 **available to hog producers in 2007 when**
8 **they decided how many sows to breed,**
9 **correct?**
10 MR. FINLEY: Objection. Form.
11 Scope. Calls for speculation.
12 A. My report doesn't offer a
13 specific opinion about that. As I said,
14 certainly a value of the various variables
15 that go into that hog cost production
16 variable reported by Iowa State, the exact
17 values of them in 2008 couldn't have been
18 known in 2007. Certainly firms form
19 expectations about the direction of market
20 factors, market inputs.
21 You and I talked earlier today
22 about, in the reply report, about
23 paragraph -- paragraph 124, which related
24 to Dr. Haider's comments about which piglet
25 loss variable rate -- I'm sorry, which

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1 M. WILLIAMS - CONFIDENTIAL
2 piglet loss rate variable should be used.
3 And in paragraph 124, I did talk
4 about -- I did talk about expectation.
5 But at any rate, I agree with you
6 that the exact values of the various
7 variables that go into that Iowa State hog
8 cost, the variable could not have been
9 known with certainty in 2007.
10 **Q. And kind of on that point or a**
11 **related point, if you could turn to**
12 **paragraph 22 of your reply.**
13 A. Okay, I'm there.
14 **Q. I apologize, 221.**
15 **And there you quote as**
16 **Dr. Mintert as stating: "The recently**
17 **developed and extremely effective**
18 **Circovirus vaccine reduced hog mortality**
19 **and led to an unexpected increase in hog**
20 **supplies."**
21 **Did I read that correctly?**
22 A. Yes. Could I have just a minute?
23 We're jumping around a little bit. I want
24 to see where we are.
25 Yes, yes, you did read it

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1 M. WILLIAMS - CONFIDENTIAL
2 correctly.
3 **Q. And this is -- I asked you a**
4 **similar question earlier with a quote from**
5 **a different source, but you don't dispute**
6 **Dr. Mintert's statement here that the**
7 **Circovirus led to an unexpected increase in**
8 **hog supplies, correct?**
9 MR. FINLEY: Objection. Form.
10 Ambiguous.
11 A. My report doesn't offer a
12 specific opinion about his use of the
13 phrase "unexpected increase." I don't know
14 exactly what he means by that.
15 You know, we talked earlier about
16 expectations. I don't know exactly how he
17 came to the conclusion that somehow this --
18 that the Circovirus caused an unexpected
19 increase in hog supplies. It's not an easy
20 thing for an economist to measure firm's
21 expectations.
22 **Q. Yeah, I can help you out a little**
23 **bit maybe. We can just kind of cut to it.**
24 **I think Defendants' position is**
25 **that Circovirus affects mortality primarily**

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1 M. WILLIAMS - CONFIDENTIAL
2 **late in the hog's life until months after a**
3 **farrow lining and that the Circovirus**
4 **vaccine was rolled out after farrowing,**
5 **after breeding decisions had been made and**
6 **live animals were on the ground that then**
7 **led to an unanticipated reduction in**
8 **mortality and an increase in hog supply**
9 **beyond the levels the hog producers**
10 **expected at the time they breed the sows.**
11 That's what is meant by
12 unexpected. So when you decided how many
13 sows to breed, you thought mortality would
14 be X. It turns out due to a change in
15 circumstances, it was less than X, so you
16 ended up with more market hogs.
17 **Make sense?**
18 MR. FINLEY: Objection. Form.
19 Compound. Vague and ambiguous.
20 A. Yeah, I mean -- you know, I
21 understand your testimony on this point.
22 But, of course, it's not -- that's not
23 in -- I don't remember seeing that in
24 Dr. Mintert's report.
25 **Q. Yeah, I'm just trying to make**

<p style="text-align: right;">Page 265</p> <p>1 M. WILLIAMS - CONFIDENTIAL 2 your views of how the cost of acquiring 3 hogs affects pork prices. 4 MR. FINLEY: Objection. Form. 5 A. The -- you know, the most 6 important input to producing pork is hogs. 7 So if the price of hogs rises, then that, 8 all other things equal, is going to cause 9 an increase in pork prices. 10 Q. If packers are making higher 11 margins, all else equal, would that 12 increase their demand for hogs? 13 MR. FINLEY: Objection. Form. 14 Scope. Incomplete hypothetical. 15 Calls for speculation. 16 A. My report doesn't offer an 17 opinion on that. 18 Q. You used the word endogeneity in 19 paragraph 114. What follows from this 20 endogeneity problem in terms of the impact 21 on the regression model? 22 MR. FINLEY: Objection. Form. 23 Vague. 24 Q. Yeah, let me just ask it a better 25 way. What impact, if any, does endogeneity</p>	<p style="text-align: right;">Page 267</p> <p>1 M. WILLIAMS - CONFIDENTIAL 2 variable correlated with the error term is 3 endogenous in such a case. 4 Now, this is the real problem. 5 In the presence of endogeneity, a linear 6 regression gives a biased estimate of the 7 coefficient for the endogenous variable and 8 also of the coefficients for other 9 variables, including the impact variable 10 that measures overcharges. And then 11 there's a quote to a very well-known 12 introductory econometrics textbook by 13 Professor Wooldridge, W-O-O-L-D-R-I-D-G-E. 14 So this is a very well-known 15 problem. It's actually been known since 16 the 1930s. But there was an economist in 17 the 1930s that first understood this. 18 And it's discussed in every 19 introductory book on econometrics. 20 If you have an endogenous 21 variable, which Dr. Haider's cost of hogs 22 variable certainly is endogenous, then the 23 estimated coefficients in that regression 24 are biased and that's a fundamental problem 25 in applying econometrics. You just don't</p>
<p style="text-align: right;">Page 266</p> <p>1 M. WILLIAMS - CONFIDENTIAL 2 have on the regression model? 3 MR. FINLEY: Same objection. 4 A. So this was discussed in 5 paragraphs 113 and 115, but the basic -- 6 well, I'll just read a little bit. I'll 7 just read paragraph 113: "By including the 8 cost of acquiring hogs is a variable in the 9 overcharge regression" -- let me insert, 10 this is not in paragraph 113, but as I 11 explain in paragraph 114 -- when Dr. Haider 12 included the "cost of acquiring hogs," she 13 did it by using the price of hogs. So 14 that's the critical thing to understand. 15 So by including the cost of 16 acquiring hogs as a variable in the 17 overcharge regression, Dr. Haider's 18 regression suffers from a well-known issue 19 of endogeneity that leads to biased 20 estimates of the overcharge. 21 So there's really the issue, but 22 we'll get to it in a bit more detail. 23 Endogeneity occurs when an 24 explanatory variable in a linear regression 25 is correlated with the error term -- the</p>	<p style="text-align: right;">Page 268</p> <p>1 M. WILLIAMS - CONFIDENTIAL 2 rely on a regression that has biased 3 coefficients. 4 Q. The term you used, "rely." So 5 does endogeneity problem make the 6 regression unreliable? 7 MR. FINLEY: Objection. Form. 8 A. I'll just read what I wrote in 9 paragraph 115: "Because the price of hogs 10 is endogenous, Dr. Haider does not take any 11 measures to solve the endogeneity problem. 12 Her estimated overcharge is biased. All of 13 the conclusions she draws from her results 14 are econometrically invalid." 15 So that's my conclusion, that her 16 estimated overcharge is econometrically 17 invalid. 18 Q. And you refer to measures to 19 solve the endogeneity problem. What could 20 she have done? 21 A. Well, the standard -- 22 MR. FINLEY: Objection. Form. 23 Hold on. 24 Objection. Form. Scope. Calls 25 for speculation.</p>

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2 A. Yeah, I should say, she could
3 have done what I do, which was to use an
4 exogenous variable, namely, the cost of
5 acquiring hogs, because that variable is
6 not endogenous.

7 But the textbook solution would
8 be to find what's call an instrumental
9 variable. But she didn't do that.

10 **Q. And you don't -- in your reply**
11 **neither your opening, nor reply report,**
12 **takes an instrumental variable approach**
13 **either, correct?**

14 A. That's correct, because it's not
15 necessary. Because my hog cost variable is
16 not endogenous, as I explain in paragraph
17 116.

18 **Q. And then you, in Footnote 162,**
19 **you mention that the endogeneity problem**
20 **would also extend to the profitability of**
21 **raising hogs, not just hog prices, right?**

22 A. That is correct.

23 MR. SCHWINGLER: All right.

24 That's all I have. I know others --
25 there is one co-Defendant that has

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2 some questions. I think he wanted a
3 few minutes to gather his thoughts and
4 it's been about an hour and 20 minutes
5 anyway. So can we take a short break.

6 THE WITNESS: Sure.

7 THE VIDEOGRAPHER: The time is
8 5:23 p.m. We are going off the
9 record.

10 (Recess taken from 5:23 p.m. to
11 5:35 p.m.)

12 THE VIDEOGRAPHER: The time is
13 5:35 p.m. We're back on the record.

14 EXAMINATION BY

15 MR. BHATTACHARYYA:

16 **Q. Good afternoon, Dr. Williams. My**
17 **name is Amarto Bhattacharyya and I**
18 **represent Clemens Food Group in this case.**

19 A. Nice to meet you.

20 **Q. I just have a few questions for**
21 **you. I hope I won't be keeping you too**
22 **long.**

23 A. I've heard that representation
24 before.

25 **Q. So I want to start with some**

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2 **opinions that you're not offering in this**
3 **case.**

4 **Does that make sense?**

5 A. Sure.

6 **Q. You are not offering any opinions**
7 **as to how much more pork Clemens would have**
8 **sold absent the alleged conspiracy,**
9 **correct?**

10 MR. FINLEY: Objection. Form.

11 A. That is correct. As you are
12 aware, I do have, as we've discussed both
13 earlier today and in my first deposition,
14 pork production regressions that measure
15 industry outputs.

16 So I do have an opinion about the
17 percentage increase in aggregate U.S.
18 production that would have occurred -- just
19 to be clear, aggregate domestic consumption
20 that would have occurred in the absence of
21 the disputed conduct, but I do not have a
22 specific opinion about Clemens.

23 **Q. And that's true for all of the**
24 **Defendants individually, you don't have an**
25 **opinion as to how much more pork each**

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2 **Defendant would have sold individually**
3 **absent the alleged conspiracy, correct?**

4 A. That is correct. As I said, I
5 have, in both my opening report and reply
6 reports, I have industry pork production
7 regressions that show what the industry --
8 what the percentage difference between
9 industry U.S. production or consumption
10 would be in the actual and but-for worlds.
11 That's a difference of about 7 percent in
12 my base regression.

13 **Q. You're aware that exports are --**
14 **an increase in exports is one of the**
15 **allegations Plaintiffs make in this case,**
16 **right?**

17 A. Yes. We talked earlier today
18 about paragraph 126 in the Complaint and
19 Plaintiffs' allegation, as I understand it,
20 that there was collusive conduct as it
21 pertains to exports. And then we talked
22 about the fact that my overcharge
23 regression and my production regression
24 measure empirically whether or not the
25 effectiveness of the asserted conduct --